

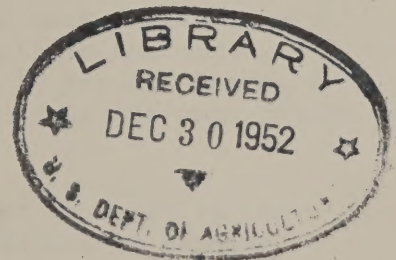
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COLORADO 34, EAGLE

FIELD APPRAISAL ANALYSIS

Prepared by
Program Analyst
Office of the Administrator
U.S. RURAL ELECTRIFICATION ADMINISTRATION

Field Appraisal
Completed in
June 1952

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October 13, 1952

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Program Analyst
Office of the Administrator

SUMMARY AND CONCLUSION

AREA CHARACTERISTICS

The population of the general area is predominantly rural, and total population numbers did not change from 1940 to 1950. Livestock farming, excluding dairy and poultry, is the major source of agricultural income. Farms have decreased in number and increased in size over the past decade, and the present average size is 695 acres. The average value of land and buildings per farm is approximately \$25,000, and about 80 percent of the farms are owned in full or in part by the operator. Gross income from sale of farm products averaged approximately \$7,500 during 1949. Minerals production, timber, and tourists are important sources of income in the area. For the most part soils are light sands. Topography and climate varies over the area. Heavy sleet storms occur infrequently.

ULTIMATE NUMBER OF CONSUMERS

On April 30, 1952, the cooperative had 1,295 members including those being served and seasonal members temporarily disconnected. The manager estimates the ultimate number of consumers to be served by this cooperative to be 1,329, not including the possible acquisition of 500 consumers in the town of Aspen. This analysis supports the estimate.

ESTIMATED FUTURE CONSUMPTION OF ELECTRICITY

Since this cooperative was energized in 1941, there has been a steady rise in average consumption of farm and residential consumers. Average monthly farm consumption has risen from 99 kwh in 1948 to 161 kwh in 1951, or by 62 kwh and 62 percent. Farm consumers who were interviewed by the appraiser indicated that they expected to increase their monthly use of electricity by about 48 kwh, or 24 percent, within the next 3 years. Nonfarm residential consumers indicated a 13 percent increase and town residential consumers a 25 percent increase over the same future period.

Over 90 percent of the indicated increase is expected to occur in the household. Approximately 80 percent of all increased use is expected to be achieved through the connection of water heaters, ranges, and freezer cabinets.

Economic trends and other factors related to the use of electricity support expected increases in usage but at levels lower than averages for all the cooperatives in the State. Other factors which could have opposite but important effects on future use of electricity are LP gas competition and irrigation. However, only 1 percent of the respondents indicated they were planning to add gas equipment, and the appraiser reports irrigation is not likely to account for much more kwh usage in the near future.

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Based on all factors believed to be significant, this analysis leads to the following estimates, which are certified as being reasonable and may be expected to be attained in the years specified.

| <u>Class of Consumer</u> | <u>12 Months Ended June 30, 1952</u> | <u>1954</u> | <u>1957</u> | <u>1962</u> |
|--------------------------|--|-------------|-------------|-------------|
| Farm | 177 | 215 | 275 | 370 |
| Nonfarm residential | 76 | 90 | 105 | 125 |
| Town residential | 125 | 170 | 215 | 265 |
| Seasonal | 25 ^{1/} | 40 | 50 | 60 |

^{1/} Estimated from sample data on seasonals.

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October 13, 1952

Program Analyst
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ANALYSIS OF THE PROBABLE FUTURE
CONSUMPTION OF ELECTRICITY
COLORADO 34 EAGLE

This analysis of the probable future consumption of electricity for the Holy Cross Electric Association, Inc., with headquarters at Glenwood Springs, Colorado, (Figure 1) is based principally on a field study conducted during May and June 1952 by Vergil Bufford, Agricultural Economist. This analysis was prepared by Robert Williamson, Business Economist. The field work included visits to 156 served and prospective consumers, of which 72 were served farm consumers, 10 were potential farm consumers, 43 were served nonfarm residential consumers, and 31 were served town residential consumers.^{1/} In addition, local businessmen, bankers, and agricultural leaders were consulted regarding local economic trends and their estimates of the future for the area as they relate to the use of electricity. Supporting economic facts were obtained from U. S. Census data for Eagle, Garfield, and Pitkin Counties and from other secondary sources.

ULTIMATE NUMBER OF CONSUMERS

On April 30, 1952, the cooperative was serving 1,223 consumers.^{2/} The manager has estimated that a total of 1,829 may be served ultimately (Figure 2). The ultimate number, according to the manager, includes 72 existing seasonal members not connected on April 30, 1952, in addition to the 1,223 members connected plus 34 signed and potential farm consumers and the possible acquisition of 500 consumers in the town of Aspen. The manager's estimate is based on existing unelectrified homes in the service area which can be expected to receive service. No additional homes or commercial developments within the area were indicated by the manager.

This estimate appears reasonable. Visits to a sample of farms listed in a recent unelectrified farm survey found three-fourths of the farms in the sample to be vacant or abandoned.^{3/} This would indicate only 22 potential farm consumers out of 88 unelectrified farms shown by the survey. While this is less than the 34 additional farm consumers estimated by the manager, in only 2 months after the manager's estimate 21 farm consumers were added. Addition of the remaining 13 of the 34 estimated by the manager would represent less than a 2 percent increase

^{1/} Respondents were randomly selected from tabular lists of each of the classes forming an over-all sample of approximately 13 percent of the served and potential farm and residential consumers.

^{2/} Does not include 8 members disconnected that are presumed to be nonseasonal.

^{3/} Based on visits to 8 unelectrified farms, i. e., approximately 10 percent of those shown by the survey.

over the farm consumers as of June 30, 1952, compared to the 3 percent actual increase in May and June. Since the number indicated by the appraisal is subject to error because of the small number of farms visited, future addition of these 13 farm consumers does not seem unreasonable. With reference to the Aspen acquisition, no final decisions have been made. The appraiser reported that the cooperative management feared the resort economy of the town to be unstable and did not especially wish to make the acquisition, but according to more recent information, negotiations for acquisition are continuing and it is assumed that these town consumers will be added eventually.

Further addition of farm and residential consumers as a result of new farms and homes does not appear likely. Over the period 1940-1950, farms and dwelling units in the general area decreased, and there is no information regarding new developments which would be likely to cause a wide reversal of these trends.

NATURE OF INDICATED FUTURE CONSUMPTION OF
ELECTRICITY AS REVEALED BY THE APPRAISAL SURVEY

A tabulation of the raw data secured from the respondents revealed the following monthly consumption figures for each class surveyed:

TABLE I
INDICATED AVERAGE MONTHLY KWH CONSUMPTION

| Consumer Class | Present | Future | Percent Increase |
|---------------------|---------|--------|------------------|
| Farm | 198 | 246 | 24 |
| Nonfarm residential | 125 | 141 | 13 |
| Town residential | 168 | 210 | 25 |

These indicated kwh values were derived from field schedules which listed the respondent's present electrical appliances and equipment and the items he expected to add within the next 3 years. Items important in terms of future kwh use by farm and residential consumers were selected from the schedules and are shown in Table II.

TABLE II

INDICATED INCREASE AND FUTURE SATURATION OF ELECTRICAL APPLIANCES
AND EQUIPMENT AND CORRESPONDING KWH USAGE, ACCORDING
TO PERCENT OF TOTAL INDICATED USAGE^{1/}

| Appliance or Equipment | Percent of Consumers | | Annual Kwh Usage (per 100 Consumers) ^{2/} | | | |
|--|----------------------------------|---------------------------|--|---------------------------------|---------------|-------------------------------|
| | Planning to Add ^{2/} | Using in the Future | Increase in Kwh ^{2/} | Percent of Total Increase | Future Kwh | Percent of Total Future |
| <u>Household Use</u> | | | 43,897 | 93.4 | 247,405 | 96.9 |
| Water Heater (House) | 7 | 16 | 20,700 | 44.1 | 49,200 | 19.3 |
| Freezer Cabinet | 9 | 41 | 8,730 | 18.6 | 38,700 | 15.2 |
| Refrigerator | 7 | 91 | 2,268 | 4.8 | 35,424 | 13.9 |
| Range | 7 | 28 | 9,000 | 19.2 | 34,680 | 13.6 |
| House Lighting | 0 | 100 | --- | --- | 32,130 | 12.6 |
| Radio | 1 | 95 | 60 | .1 | 11,330 | 4.4 |
| Iron | 0 | 97 | --- | --- | 10,320 | 4.0 |
| Pressure System | 5 | 27 | 804 | 1.7 | 5,706 | 2.2 |
| Roaster | 1 | 9 | 336 | .7 | 4,128 | 1.6 |
| Coal Stoker | 1 | 14 | 14 ^{1/2} | .3 | 3,384 | 1.3 |
| Washing Machine | 3 | 84 | 115 | .2 | 3,143 | 1.2 |
| Toaster | 1 | 72 | --- | --- | 2,706 | 1.1 |
| Blanket | 2 | 9 | 195 | .4 | 2,340 | .9 |
| Percolator | 1 | 34 | 204 | .4 | 2,154 | .8 |
| Hot Plate | 1 | 30 | 77 | .2 | 2,135 | .8 |
| Waffle Iron | 3 | 55 | 57 | .1 | 1,465 | .6 |
| Food Mixer | 4 | 51 | 98 | .2 | 1,348 | .5 |
| Clock | 0 | 56 | --- | --- | 1,238 | .5 |
| Oil Furnace | 2 | 4 | 690 | 1.5 | 1,170 | .5 |
| Space Heater | | | | | | |
| (Supplementary) | 0 | 14 | --- | --- | 1,169 | .5 |
| Vacuum Cleaner | 1 | 54 | --- | --- | 1,110 | .4 |
| Yard Lighting | 14 | 41 | 301 | .6 | 929 | .4 |
| Ironer | 1 | .5 | 84 | .2 | 564 | .2 |
| Other Household Use ^{4/} | --- | --- | 34 | .1 | 932 | .4 |
| <u>Farm Production Use</u> | | | 2,965 | 6.4 | 7,333 | 2.9 |
| Dairy Water Heater | 1 | 1 | 1,200 | 2.6 | 1,200 | .5 |
| Hover Brooder | 1 | 9 | 146 | .3 | 912 | .3 |
| Gen. Barn Lighting | 12 | 33 | 291 | .6 | 881 | .3 |
| Cream Separator | 1 | 15 | --- | --- | 518 | .2 |
| Milking Machine | 1 | 2 | 235 | .5 | 469 | .2 |
| Other Productive Use ^{5/} | --- | --- | 1,093 | 2.4 | 3,353 | 1.4 |
| <u>Miscellaneous Lighting^{6/}</u> | | | 99 | .2 | 588 | .2 |
| Total | | | 46,961 | 100.0 | 255,326 | 100.0 |

- 1/ Based on all classes sampled and not weighted to take into account the relative number of total consumers in each class.
- 2/ Difference between indicated present and future.
- 3/ Based on average annual requirements determined by REA. Data reflect instances where there will be more than one of the same appliance per consumer.
- 4/ Including: Sewing machine, household fan, kitchen exhaust fan, window ventilator, heating pad, central hot air circ. fan, dishwasher.
- 5/ Including: Air compressor, drill press, tool grinder, power saw, lathe, forge, soldering iron, shop lighting, welder, dairy barn lighting, poultry laying house lighting, feed grinder or roller, milk cooler, pig brooder, beef cattle barn lighting, poultry brooder house lighting, fruit packing house lighting, grain and feed storage building lighting, livestock watering, garden watering, grain elevator, potato grader, seed cleaner, poultry water warmer, stock tank heater, lamb brooder.
- 6/ Including: Garage lighting, bunk house lighting, cave or spring house lighting, other buildings lighting.

As indicated in the table, some of the more important items in terms of an increase in kwh are: house water heaters, ranges, freezers, refrigerators, and dairy water heaters.

Farm consumers comprised about two-thirds of the total farm and residential consumers at the time the appraisal was made. For served and potential farm consumers the relative importance of individual appliances and equipment was very similar to that shown in Table II for all farm and residential consumers.

The following table shows for separate classes the distribution of consumers according to their indicated future use of electricity.

TABLE III
PERCENTAGE DISTRIBUTION OF CONSUMERS ACCORDING
TO INDICATED FUTURE USE OF ELECTRICITY

| Average Monthly Kwh Consumption | Percent in Class | | |
|------------------------------------|------------------|----------------|-------------|
| | <u>Farm</u> | <u>Nonfarm</u> | <u>Town</u> |
| Under 50 | 1.5 | 13.8 | 0.0 |
| 50 - 99 | 25.0 | 37.9 | 42.0 |
| 100 - 199 | 33.8 | 31.0 | 16.1 |
| 200 - 299 | 14.7 | 10.4 | 16.1 |
| 300 - 399 | 2.9 | 0.0 | 9.7 |
| 400 and over | <u>22.1</u> | <u>6.9</u> | <u>16.1</u> |
| Totals | 100.0 | 100.0 | 100.0 |

There were 72 seasonal consumers not connected as of April 30, 1952, according to the manager. Seasonal consumers are classified as nonfarm residential consumers on the cooperative's operating report. For rate and billing purposes a residential consumer is classified as seasonal if he is connected from April 20 to November 20 and pays a seasonal charge in advance. Nonfarm consumers who are in the area only portions of the year but pay a minimum bill for each month are not classified as seasonal. This is primarily a summer and winter recreation area, and apparently most of the seasonal consumers were absent from the area in May and early June when the appraisal was made. Eleven of the consumers classified as seasonal were visited and were not at home. Only one usable schedule was obtained from a respondent who could be definitely termed seasonal. A sample of billing records for 20 seasonal consumers indicated an average usage of 289 kwh during 1951 and 345 kwh during the first 9 months of 1952.

ECONOMIC CHARACTERISTICS

Total population numbers for the general area did not change from 1940 to 1950. The population is predominantly rural and nonwhite farm operators are relatively few.

Livestock farming, excluding dairy and poultry, accounts for over three-fourths of the farm income. Eighty-five percent of the farms report an average of 61 cattle and calves, and about one-fourth report an average of 524 sheep. Pasture land accounts for approximately 80 percent of all land in farms. Most of the farms grow hay crops, principally alfalfa, clover, and timothy. Some small grains, wheat and barley, as well as potatoes, are also grown. On the mesas of Garfield County, fruits and berries are produced, but income from this source is relatively small. There is some dairying, but the amount of milk produced is not sufficient to supply the local demand.

Farms decreased in number and increased in size over the period 1940-1950. While there are a number of large ranches in the area, over one-half the farms of respondents were under 260 acres and the average size was 695 acres.

The average value of land and buildings per farm was \$25,686 in 1950, or approximately 130 percent greater than in 1945. Average values range from a little more than \$20,000 in Garfield County to almost \$40,000 in Pitkin County. Farm ownership is high with approximately four-fifths of the farms owned in full or part by the farm operator.

A 2.55 to 1 ratio of bank deposits to loans was reported by banks visited in the area. Gross income from sale of farm products averaged approximately \$7,500 for the area during 1949, and county averages ranged from approximately \$6,200 in Garfield County to over \$12,000 in Eagle County. Income

from off-the-farm employment exceeding the value of farm products sold was reported for 1949 by almost one-fourth of the farm operators in the three-county area and 40 percent of the farm operators reported some off-the-farm employment during the year. Of the farm consumers interviewed by the field appraiser, 12 percent reported at least one member of the household working off the farm full time during 1951.

Marketing facilities for the area appear to be adequate. Most of the livestock produced in the area are sold on the ranges to individuals or shipped to Denver markets. A railroad and a through highway traverse the area (Figure 1) providing direct connections with Denver and other important centers. Whereas data for the three-county area shows approximately 40 percent of the farms to be on dirt or unimproved roads, paved and improved roads parallel the backbone of each of the system's segments.

Minerals production is important in the general area. During 1949 there were 7 mines in the area which produced zinc, lead, copper, silver, or gold. Four of these were in Eagle County and 3 were in Pitkin County. The largest zinc-producing mine in the State, employing some 500 persons, is the Eagle mine at Gilman on the eastern end of the cooperative's system. The Eagle mine at nearby Red Cliff is one of the larger lead-producing mines in the State. This company is also a leading silver producer.

There is an oil shale mine and experimental reduction plant operated by the Federal Government near Rifle in Garfield County. This project employs approximately 80 people. Uranium is mined in the area and milled by the U. S. Vanadium Company at Rifle. This mill employs between 75 to 100 people. There are a number of small coal mines in the area supplying coal for the nearby communities.

The White River National Forest is in the general area. It contains 2,090,000 acres and covers portions of Eagle, Garfield, Pitkin and other counties. Ranchers are granted permits to graze cattle and sheep in the forest.

Over one million acres of timber have been killed in the past few years by the "pine beetle." This dead timber is being cut and shipped out of the area to be ground for paper pulp. Efforts to construct a paper mill in the area to handle this dead timber have been unsuccessful to date. There are many saw mills throughout the entire area.

An important source of income to the area is its tourist trade. The area offers both summer and winter recreation and tourist attractions. Aspen is well known as a skiing center, and Glenwood Springs has an established summer tourist trade.

PHYSICAL CHARACTERISTICS

The service area is in northwestern Colorado, just to the west of the Continental Divide. The principal sections of the system follow the valleys of the Colorado River and its tributaries. Topography varies from the narrow valley floors to peaks of the Rocky Mountains, with most of the land area in high tablelands. The altitude of approximately 5,700 feet at Glenwood Springs compares with over 10,000 feet for some of the peaks in the area. For the most part soils are light sands, with loams found in the valleys. A continental type of climate is characteristic of the area. Because of the differences in altitude there is a variety of climatic conditions. Temperatures averaging 23 degrees in January and 70 degrees in July, a growing season of around 130 days, and annual precipitation of between 10 and 15 inches are reported by the weather stations at Glenwood Springs and Rifle. Heavy sleet storms occur only infrequently in the area.

ANALYSIS OF FUTURE KWH CONSUMPTION

Since this cooperative was energized in 1941, there has been a steady rise in average consumption for farm and residential consumers. Historical consumption records for farm and residential consumers in the survey indicate a general rise in average consumption for individual consumers as the number of years they have had service increased. Also, in some cases newer consumers have attained higher initial averages than consumers connected over a longer period, but this has not been consistently true. These factors underlying increases in the over-all average of consumption are revealed in the following table.

TABLE IV

AVERAGE MONTHLY KWH CONSUMPTION

| Total Number of Years With Electricity | Number of Schedules | Average Kwh Consumption Per Month | | | | | | | | | |
|--|------------------------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 1942 | '43 | '44 | '45 | '46 | '47 | '48 | '49 | '50 | '51 |
| 10 | 12 | 41 | 49 | 43 | 46 | 49 | 56 | 73 | 114 | 167 | 189 |
| 9 | 0 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 16 | --- | --- | 97 | 107 | 112 | 131 | 163 | 193 | 197 | 191 |
| 7 | 5 | --- | --- | --- | 45 | 80 | 92 | 116 | 237 | 309 | 356 |
| 6 | 5 | --- | --- | --- | --- | 31 | 43 | 78 | 137 | 71 | 60 |
| 5 | 8 | --- | --- | --- | --- | --- | 41 | 46 | 59 | 72 | 78 |
| 4 | 13 | --- | --- | --- | --- | --- | --- | 74 | 106 | 113 | 165 |
| 3 | 10 | --- | --- | --- | --- | --- | --- | --- | 74 | 82 | 88 |
| 2 | 14 | --- | --- | --- | --- | --- | --- | --- | --- | 37 | 75 |
| 1 | 25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 172 |

The historical records indicate also that rates of increase have been greater since World War II and that the increase for individual consumers has been greater than the over-all rate of increase. For example, the average monthly consumption of all farm consumers rose from 39 kwh in 1942 to 161 kwh in 1951, or by a 13.5 kwh monthly average for each year. From 1947 the increase in monthly average for each year was 19.5 kwh. From 1947 to 1951 the average monthly consumption of farm consumers connected in 1942 increased from 59 kwh to 204 kwh. This represents an average increase of 36 kwh for each year compared to the 19.5 kwh increase for all farm consumers over the same period. This latter comparison indicates the manner in which the addition of new consumers has reduced the rate of increase of the over-all average. The prospect of only a few additional consumers would indicate a future growth nearer the higher increase of the older consumers than the over-all increase "diluted" by the addition of new consumers.

Trends related to future use of electricity by consumers of this cooperative are presented in Table V. In general, they indicate developments favorable to increased usage of electricity. Should these trends continue, the expectations of the respondents regarding the addition of electrical appliances and equipment should be met, and the estimates made in this appraisal should be achieved. On the other hand, the data presented in Table V indicate that in general the consumption potential for this cooperative has not been developing at the same level as the potential for other cooperatives in the State. Average farm values in the service area rose between 1945 and 1950 at a higher rate than the average for the State as a whole, but they remained below the State average. Average farm income has increased, but at a slower rate and lower level than for the State. Although the average cost of purchased power for this cooperative has declined steadily since 1942, it has remained above the average for all cooperatives in Colorado. In view of these facts it is not surprising that the average monthly consumption per farm consumer has remained below averages for the State and nearby systems. However, the farm use for this cooperative increased at a faster rate over the period 1942-1951 than did the average for all cooperatives in the State and faster than the trends presented in Table V would have indicated.

TABLE VTRENDS RELATED TO THE RATE OF
INCREASE IN USE OF ELECTRIC POWER

| Item and Relationship | Trend | | | |
|---|---------------------------|---------------------------|---------------------------|-------------------|
| Value of Land and Buildings | | | | |
| Per Farm | <u>1940</u> | <u>1945</u> | <u>1950</u> | |
| Service Area | 8,175 | 11,051 | 25,686 | |
| State of Colorado | 7,550 | 11,855 | 26,164 | |
| Ratio of Area to State | 1.08 | .93 | .98 | |
| Average Income from all Farm | | | | |
| Products Sold | <u>1939</u> | <u>1944</u> | <u>1949</u> | |
| Service Area | 2,292 | 4,837 | 7,524 | |
| State of Colorado | 1,975 | 5,261 | 9,357 | |
| Ratio of Area to State | 1.16 | .92 | .80 | |
| Average Cost of Purchased Power ^{1/} | <u>1942</u> ^{2/} | <u>1944</u> ^{2/} | <u>1949</u> ^{2/} | <u>1951</u> |
| Colorado 34 Eagle | 1.28 ^{2/} | 1.24 ^{2/} | 1.23 ^{2/} | 1.18 |
| All Co-ops in Colorado | 1.02 | 1.02 | 1.05 | .94 |
| Ratio Colo.34 to All | 1.25 | 1.22 | 1.17 | 1.26 |
| Average Monthly Kwh Consumption | | | | |
| Per Farm Consumer | <u>1942</u> | <u>1944</u> | <u>1949</u> | <u>1951</u> |
| Colorado 34 Eagle | 39 | 59 | 124 | 161 |
| All Co-ops in Colorado | 64 | 82 | 162 | 201 ^{3/} |
| Ratio Colo.34 to All | .61 | .72 | .77 | .80 |
| Two Neighboring Cooperatives ^{4/} | 66 | 72 | 198 | 244 |
| Ratio Colorado 34 to Neighbors | .59 | .82 | .63 | .66 |

^{1/} Fiscal years.^{2/} Weighted (2 suppliers).^{3/} Average of 18 out of 23 cooperatives in State.^{4/} Colorado 16 Jefferson and Colorado 35 Chaffee.

Another factor which will have an effect upon future consumption of electricity is the use of LP gas. Use of LP gas was reported by almost one-fifth the respondents with the greatest use being for cooking. It is estimated that if electricity were used instead of gas by these consumers the present annual kwh usage by these classes would be approximately

10 percent greater. However, only 1 percent of the farm and residential consumers indicated they were planning to add gas equipment, and on this basis it is assumed competition from gas will not be any more serious than it has been to date. Addition of town consumers in Aspen might add town consumers having a greater number of gas appliances and equipment, but no definite information has been obtained regarding the use of gas by these consumers.

This cooperative does not report a separate class of irrigation consumers, and it does not appear likely that irrigation accounts for much kwh usage or that it will in the near future. Some small pump and sprinkler irrigation pumps are being used, but gravity irrigation predominates.

Average monthly kwh usage indications and estimates for the year ending June 30, 1955, are presented in Table VI. This table presents some of the indicated averages which had an important bearing on the final estimates.

TABLE VI
3-YEAR PROJECTIONS AND ESTIMATES OF
AVERAGE MONTHLY USE

| | 12 Months Ended June 30, 1952 | Within 3 Years | | | | |
|---------------------|----------------------------------|---|-----|---|-------------------|----------|
| | | Indicated by Appraisal ^{1/} | | Projection of Historical Increase ^{2/} | | |
| | | Percent of Present | Kwh | First All Connected | | Estimate |
| Farm | 177 | 124 | 219 | 236 | 286 | 245 |
| Nonfarm residential | 76 | 113 | 86 | 84 | 89 | 97 |
| Town residential | 125 | 125 | 156 | 172 | 190 ^{3/} | 190 |

^{1/} Based on field appraisal results. Percentages derived from Table I.

^{2/} Based on average increase over the period 1947-1951.

^{3/} Based on town consumers connected in 1944. Sample of earlier consumers inadequate.

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The indications by respondents of future use were adjusted in view of the differences between their indications of present usage and present actual averages for the cooperative. However, the respondents' indications of the relative importance of particular appliances and equipment to future use as shown in Table II and of the relative increases in kwh usage as summarized in Table I were assumed to be reasonably accurate for the system as a whole. The historical trend projections shown in Table VI, especially those based on increases in usage by older consumers, were considered significant for the reasons given in the discussion of historical trends.

In view of the data available and the foregoing analysis, it is certified that the following estimates are reasonable and may be expected to be attained by the years specified:

| <u>Class of Consumer</u> | <u>12 Months Ended</u> | | | |
|--------------------------|------------------------|-------------|-------------|-------------|
| | <u>June 30, 1952</u> | <u>1954</u> | <u>1957</u> | <u>1962</u> |
| Farm | 177 | 215 | 275 | 370 |
| Nonfarm residential | 76 | 90 | 105 | 125 |
| Town residential | 125 _{1/} | 170 | 215 | 265 |
| Seasonal | 25 _{1/} | 40 | 50 | 60 |

1/ Estimated from sample data on seasonals.

